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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Spring Catch Devices for Hinged Closures

We, LICENTIA PATENT-VERWALTUNGS-G.M.B.H., a German Company having its registered office at Frankfurt (Main), Theodor-Stern-Kai 1, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement: —

This invention relates to spring catch means for doors, and the like hinged closures, and is of particular advantage in its application to evaporator doors in domestic refrigerator cabinets, e.g. for closing the deep freeze compartment formed by the evaporator

Such evaporator doors are known in the most varied forms, e.g. such as swivel doors turning about a vertical axis, or flap doors opening from top to bottom or vice versa.

The object of the invention is to provide a practical spring catch means, especially suitable for evaporator doors pivoted about a horizontal axis but also applicable to other hinged closures, and permitting simplifier assembly and speedy replacement of parts as well as ready adjustment of the spring.

The invention is a spring catch means comprising a plunger acting as a hinge pin of a detachable closure member, the plunger being spring loaded and supported by the closure member for axial sliding movement and having a head urged by the spring into a recess in a frame, the head and the recess being so shaped as to prevent relative rotation and the spring being under torsional stress tending to keep the closure member in the closed position in the frame.

In the case where the means is applied to the evaporator compartment of a refrigerator the spring is forced at one end against a partition in a casing, while at the other end it is hooked over a pin penetrating the plunger. In the retracted condition the plunger is retained by a detachable slidable bolt passing through a part of the evaporator door. The plunger has a neck located between the head and the shank of the plunger and the bolt is movable in the evaporator door to engage the neck in the retracted condition of the plunger.

The plunger is secured against rotation, in the tensioned condition until a polygonal head engages in the recess provided in the refrigerator side-wall by means of a stop provided on the evaporator door. Before inserting the evaporator door in the refrigerator, the necessary torsion has been imparted to the spring, so that when the plunger is in the inserted condition the evaporator door will tend to close under the torsion. When the evaporator door has been placed in correct position in the refrigerator, the bolt penetrating through the evaporator door and engaging the plunger neck is pulled out. The spring will then force the plunger in axial direction into the recess in the side of the cabinet but during this movement rotation of the plunger is prevented first by the stop and finally by the recess.

Referring to the drawings, an example of the invention will now be described in more detail with reference to the accompanying drawings, in which: —

Fig. 1 shows the spring catch means with the plunger in the retracted position.

Fig. 2 shows the plunger engaged in the wall of a refrigerator cabinet.

A plunger shank 3 which acts as a hinge pin is provided with a polygonal head 4 and is mounted for axial movement in a casing 1 of a detachable closure member, shown as an evaporator door. In a neck 6 between the polygonal head 4 and a shank 3, the latter is

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held against the pressure of spring 5 by means of a retaining bolt 9 which passes through a bore 7 in the evaporator door. One of the faces of the polygonal head 4 will then bear upon a flat stop 8 which is provided on the door. Rotation of the plunger 3 is thus prevented and the spring 5 is at the same time kept under tension. After removing the bolt 9, the plunger 3 with the polygonal head 4 is forced by the pressure of the spring 5 along the stop 8 and into a suitable polygonal recess 10 formed in the lateral wall of the cabinet frame, as will be seen from Fig. 2. At the same time the polygonal head 4 will slide past the flat stop 8, but will now bear in the recess 10 in the wall of the cabinet frame, so that the torsion of the spring 5 is able to close the door, since the respective shapes of the head and the recess prevent relative rotation.

In order to retract the plunger 3 a bent lever (not shown) is engaged in the neck 6. When the bore 7 is in alignment with the neck 6, the retaining bolt 9 can be re-engaged.

The polygonal head 4 may be a square or a hexagon, for example. Adjustment of the spring torsion is performed with the door removed and the spring axially released, i.e. in a position of the plunger corresponding to that shown in Fig. 2, by turning the plunger then through 90 or 60 degrees, respectively and forcing it back and securing it in this position by means of the bolt 9.

WHAT WE CLAIM IS:—

1. A spring catch means comprising a plunger acting as a hinge pin of a detachable closure member, the plunger being spring loaded and supported by the closure member for axial sliding movement and having a head urged by the spring into a recess in a frame, the head and the recess being so shaped as to prevent relative rotation and the spring being under a torsional stress tending to keep the closure member in the closed position in the frame.

2. A spring catch means according to Claim 1, in which the plunger has a neck adapted to be engaged by a detachable slidable bolt to retain the plunger in a retracted position.

3. A spring catch means according to Claim 1 or 2, in which the head of the plunger is either square or hexagonal in cross-section.

4. A spring catch means substantially as hereinbefore described with reference to the accompanying drawings.

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972813 COMPLETE SPECIFICATION

1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

Fig. 1.

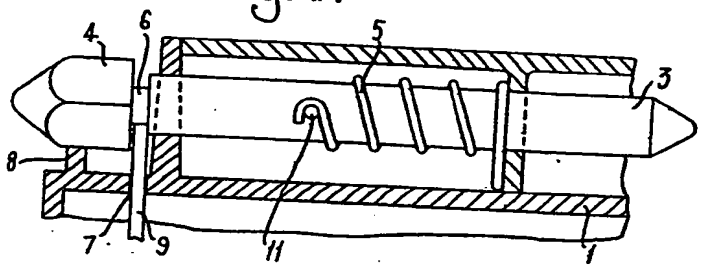

Fig. 2.